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ROUTING FREIGHT SHIPMENTS

ONE OF A SERIES OF TREATISES IN AN INTERSTATE
COMMERCE AND RAILWAY TRAFFIC COURSE

J. F. MORTON
Assistant Traffic Director
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LaSalle Extension University
(Non-Resident Instruction)
CHICAGO

927-B

INTERSTATE COMMERCE
AND
RAILWAY TRAFFIC COURSE

The subjects listed below constitute the basic material of a course in Interstate Commerce and Railway Traffic. This course is especially designed to meet the constantly growing demand for efficiently trained men in railroad and industrial traffic work; to assist students to pass the examinations for government service under the Interstate Commerce Commission; and to meet the demand for men competent to direct the work of commercial organizations and traffic bureaus. With the exception of the Atlas of Railway Traffic Maps, the subjects listed below are covered in an average of approximately 200 pages each.

Atlas of Railway Traffic Maps
Traffic Glossary
Freight Classification; Some Ways of Reducing Freight Charges
Freight Rates: Western Territory; Bases for Freight Charges
Freight Rates: Official Classification Territory and Eastern Canada; Industrial Traffic Department
Freight Rates: Southern Territory
Publication and Filing of Tariffs
Freight Claims; Investigation of Freight Claims; Routing Freight Shipments; The Bill of Lading; A Primary Lesson in Transit; Demurrage
Railway Organization; Statistics of Freight Traffic; Railway Accounting
The Express Service and Rates
Ocean Traffic and Trade
Railway Regulation
The Act to Regulate Commerce and Supplemental Acts
Conference Rulings; Procedure Before the Interstate Commerce Commission; Grounds of Proof in Rate Cases
Application of Agency Tariffs
The Law of Carriers of Goods
Practical Traffic Problems

LASALLE EXTENSION UNIVERSITY

ROUTING FREIGHT SHIPMENTS

J. F. MORTON
Assistant Traffic Director
Chicago Association of Commerce

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ROUTING FREIGHT SHIPMENTS

What Is Routing

It is not an easy matter to describe just exactly what is implied by the word "routing," particularly when it relates to routing freight shipments.

It is evident that a person wishing to make a journey would not board the first passenger train that he saw, or possibly the one nearest his residence or place of business. It is more likely that he would study the schedules and acquaint himself with the times of arrival and departure by the several routes and of the number of times to transfer; and he would also find out whether close connection could be made at the transfer points. His selection would certainly be made in accordance with his understanding of the service performed by each of the routes.

It cannot be said that a shipper is routing his shipments when they are given indiscriminately to one or more of the various routes, or when divided among the routes either by periods or by tonnage.

Section 15 of the Act to Regulate Commerce gives to the shipper the right to route his freight. This section reads as follows:

In all cases where at the time of delivery of property to any railroad corporation being a common carrier, for transportation subject to the provisions of this Act to any point of destination, between which and the point of such delivery for shipment two or more through routes and through rates shall have been established as in this Act provided to which through routes and through rates such carrier is a party, the person, firm, or corporation making such shipment, subject to such reasonable exceptions and regulations as the Interstate Commerce Commission shall from time to time prescribe, shall have the right to designate in writing by which of such through routes such property shall be transported to destination, and it shall thereupon be the duty of the initial carrier to route said property and issue a through bill of lading therefor as so directed, and to transport said property over its own line or lines and to deliver the same to a connecting line or lines according to such through route, and it shall be the duty of each of said connecting carriers to receive said property and transport it over the said line or lines and deliver the same to the next succeeding carrier or consignee according to the routing instructions in said bill of lading: *Provided, however,* That the shipper shall in all instances have the right to determine, where competing lines of railroad constitute portions of a through line or route, over which of said competing lines so constituting a portion of said through line or route his freight shall be transported.

The law has given to the shipper the right to route his freight; therefore, having the right to route his freight, the shipper should exercise this right to the fullest extent, as he knows better than anyone else can what routing best serves his purposes.

Shipments are not routed when given to a particular line on account of the personality or the influence of an individual; or when withheld from a particular line on account of a dislike or grievance against that line.

Because the shipper has the privilege of arbitrarily giving his shipments to any line he may choose (regard-

less of the service), it does not imply that such shipments are routed.

"Routing" consists of specific instructions as to how the shipment should be handled. It is something which the shipper attaches to his shipments and which will enable all those who may have a hand in its movement to coöperate with the shipper in the carrying out of his desires, by the fulfillment of which he expects to produce certain results.

It is implied in the giving of these instructions that the shipper has reasons for making this selection. These reasons may be few or many and may be valid or invalid; his deductions may be correct or incorrect; but, if he has carefully considered the conditions under which his shipments are to be handled and the possible effect this routing may have upon his present and future business, it can be said that he is routing his shipments.

The merchant or manufacturer does not generally purchase goods until he has satisfied himself that he is getting those best adapted to the needs of his particular business, and he should use the same discrimination in the routing of shipments.

Necessity for Routing Shipments

It is a fact and generally so conceded that the prompt transportation of freight between the seller and the buyer is one of the most effective means in the extension and retaining of trade. The tendency of the present-day merchants is to buy in small quantities and more often. This enables the retailer to keep his stock replenished with fresh goods and in the latest styles with the least amount of capital invested. In order to meet the requirements

of such merchants it is absolutely necessary that the wholesaler have quick transportation service. It may be true that in some instances he may not get the service to which he thinks he is entitled, and probably should have; but as a general proposition the service performed by the carriers is good. This statement is predicated upon the assumption that the shipper is in a position to know which of the carriers can furnish the best service for each of his shipments.

There is probably no one act on the part of the shipper so important and so necessary to the prompt transportation of less-than-carload shipments as correct routing.

That the routing used by the shipper determines the time of arrival and the condition of the shipment at destination is better recognized by the carrier than by the shipper. Because one road can deliver shipments to certain points more quickly and in better condition than its competitor, it also follows that the competitor can deliver to certain other points in quicker time and in better condition. The recognition of this fact on the part of the carriers is the one animating principle of operation. The desire to equal or excel their competitors results in improvements of the service, such as improved road beds, rolling stock, faster schedules, the operation of through package cars, etc. But regardless of all such improvements, the fact still remains that the shipper will by proper discrimination enjoy the best service by routing his shipments in accordance with the service performed by each of the lines, giving to each road those shipments to such points where its service is superior to that of its competitor. Should the shipper, on account of local conditions, such as the location of freight houses, etc., decide (after duly considering the advantages and

disadvantages) that the advantages gained by routing in accordance with local conditions are more desirable than those to be derived from good service, such shipper may be said to be routing his shipments. In other words, the routing of shipments implies that the shipper has an intelligent conception of the result of his routing when making a selection of the service offered by each of the lines.

It is impossible to anticipate these local conditions and the many reasons actuating the individual when routing his shipments; neither can a set of rules be made to apply to such varied conditions. It is necessary for the shipper to study the conditions and make his decision in accordance with the effect it may have on his business as a whole. He should also carefully consider the effect his routing may have upon his community as a market.

The shipper's failing to profit by proper discrimination in his routing places upon the shipper rather than upon the carrier the responsibility of slow service and the loss and damage resulting therefrom to his shipments, as well as the annoyance and expense to the carriers by useless tracing and the adjustment of claims.

Unrouted shipments are as driftwood upon the stream of transportation. Their movements are uncertain. They are subject to no other law than that which the carriers may see fit to give them. It is over this class of shipments that the carriers have absolute power to divert and exchange with their connections for traffic reasons, often to the detriment of the service and against the wishes and the welfare of the shipper and the consignee. To emphasize this danger and impress the shipper with the importance of routing his freight, Diagram 1 will show how this class of shipments may be and is often

diverted from the most advantageous route solely for traffic purposes.

A, B, C, and D are junctions. F, G, and H are competing lines. E is a connecting line. Line H makes an agreement with line E that, for shipments unrouted and originating at stations on line E and at junction D, they will exchange an equal amount of tonnage originating at A or C destined to points on line E and junction D. At the time of settlement, it is found that line H has failed to exchange the proper amount of tonnage with line E, and it becomes necessary to augment this tonnage by diverting shipments originating at A and destined to B. In order to do this, it is necessary for line H to pass through junctions B, C, and D, and thence over line E to B. Thus you will observe that the shipments passed through B (the destination), C, and D, and finally reached B the second time.

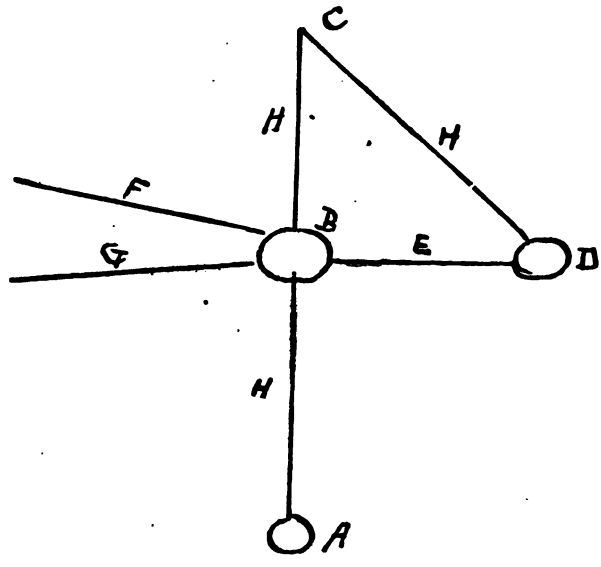

Diagram 1

It is not infrequent that the routing furnished for a shipment is overlooked and sometimes ignored. To avoid this possibility, shipments should be routed (the service being equal) only via the initial line, to whose interest it will be to forward the shipment via the routing furnished by the shipper. This will prevent many divergences.

Transfers

The word "transfers" is used to describe points where shipments are rehandled before reaching final destination, as is described in the section on through cars.

Each railway system has a number of transfer points, or clearing house stations, for the consolidation of less-than-carload shipments. All shipments that cannot be loaded at point of origin to their final destination in through cars are loaded to these transfer points where they are reloaded into other cars for final destination, or possibly loaded to a second transfer point, and thence to final destination. Since the nature of these transfers greatly influences the prompt movement of shipments, it is necessary that the shipper acquaint himself with the location and the manner in which the shipments are handled at these points. The following is a description of the various transfer points which are classified in order of their preference:

Class A consists of transfer points where shipments are reloaded to final destination from the same platform at which the through merchandise car from original point of shipment is received. At these points, shipments are handled direct from one car to another and loaded for final destination without further handling and without the necessity of transferring from one road to another

by teaming or switching. This class of transfer enables the shipment to pass through from point of origin to final destination with the least possible delay and with less handling than by any other method. Railroad claim agents and those interested in prompt delivery at destination will appreciate the advantage of this class of transfer.

Class B consists of transfer points at which delivery is made from one line to another by use of teams. Ordinarily, there should be no more delay in this method of transferring than there is in Class A, but the possibility is ever present, and delays will occur in cases where the through car arrives at the transfer platform late in the day, but may not be too late to be handled and forwarded the same day with a Class-A transfer; delays will also occur at transfer points where a night force is employed and the through car is due to arrive too late to be worked by the day force. This work can be done by the night crew, and the shipments will go forward the following morning; but it would be too late for teaming to connecting line in time to go forward the same day of arrival or the next morning.

In addition to these possibilities of delay the liability of loss and damage is greatly increased. For example, when the contents of a through car are removed at the transfer point, such shipments as are to be delivered to connecting lines with teams are placed in piles on the floor of the warehouse convenient to the wagons; they are then loaded and teamed to connecting lines, where they are handled through the warehouses of these lines and reloaded into cars for final destination. It will be seen that shipments subjected to this class of transfer are

handled four times at each transfer point as compared with one handling through a Class-A transfer.

Class C consists of transfers at which the conditions are the same as in Class B, but the transfer is made from one road to another by switching instead of by teaming. The number of times that a shipment will be handled by this method is less than in Class B, but the delay is greatly in excess of that of any other transfer. For instance, when the contents of the through car are unloaded, shipments for connecting lines, instead of being piled in the warehouse as in Class B, are loaded into cars as in Class A; these cars are then switched to connecting lines, where the shipments are again unloaded and distributed into cars for final destinations. At a few transfer points where the shipments are destined to highly competitive points, the receiving line and the forwarding line have special arrangements for making an extra switch for the purpose of delivering cars in time for the contents to be distributed and go forward the same day. But such places are rare, and this can be done only where the through car is due early in the day and arrives in time to be unloaded. The general rule in handling this class of transfers is that, when the car arrives and is unloaded before noon, the car to be switched to the connecting line is pulled from the platform at the 12:00 M. switch, and by general agreement with the connections the interchange is made at a certain hour, each road making its deliveries and at the same time receiving similar freight. By the time this is accomplished, it is generally too late to place cars at the platform of the forwarding line for distribution and forwarding the same day, and in very few cases is any effort made to do so. This transfer causes a delay of not less than 24 hours.

Class D consists of transfer points where the transfer from one line to another is done by lighter. The delay and the number of times handled are about the same as in Class B, with the exception that the lighter service is usually performed on regular schedules, and in cases where the shipments arrive too late for the regular movement by lighter, they are liable to be held over until the following day, whereas, in Class B, the teams make many trips daily and are more likely to move late arrivals in time to permit of their being forwarded the same day.

Rules for Routing Freight

There are two fundamental rules governing the routing of less-than-carload freight. (1) Where the rate is the first consideration the shipment must move via the route over which the rate applies, regardless of the service. (2) Where the service is the first consideration the shipment should move over the most advantageous route.

Generally speaking, the rate will apply via the route over which the best service is obtainable; but there are some exceptions to this rule, particularly when a shipment moves under a special commodity rate. Commodity rates are usually made to apply on certain articles from a certain point of production to a given destination, and the same rate may be applicable via several routes. In cases where an article moves under a special commodity rate and one route is arbitrarily fixed there can be no choice as to service; but should the rate apply via more than one route the consignor is at liberty to select the route giving the best service and route his shipments accordingly. It is sometimes the case that a commodity rate will apply via one route only, and the class rate for

the same article and same destination will govern via another route; yet the commodity and the class rates may be the same in cents per 100 pounds. In such cases the shipper should select the route giving the best service.

It is essential that the shipper should study the territory to which his shipments move, and become familiar with the various routes, transfer points, where and how the shipment is transferred, and the character of the service beyond the point at which the car will break bulk.

Wherever it is impossible to load a shipment through to destination without transfer, it should be so routed as to procure a through-train movement to the point at which the car breaks bulk and a through-train movement from the break-bulk point to destination if it is possible to do so. At the same time, care should be used in selecting the route, giving the shipper the benefit of the transfer as described in Class A, page 7. Diagram 2 illustrates the method just mentioned. A is point of origin, B transfer point, and C destination. D, E, and F are participating carriers. Shipments via line E are to break bulk at B; Class-A transfer has a through-train movement to B and a through-train movement from B to C, while shipments moving by line D to break bulk at B have Class-C transfer (described on page 9) and a local-train movement from B to C.

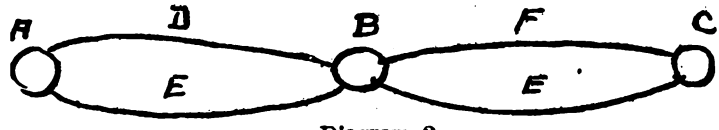

Diagram 2

Thus it will be seen that shipments originating at A can be delivered at C with the least delay in transfer and

the quickest time in movement; therefore, shipments should be routed via line E in preference to line D.

In addition to the two fundamental rules governing the routing of less-than-carload freight, there is another that can be applied generally. In the absence of detailed information as outlined above, this rule has been found, by experience, to be the most practical in operation. The various destinations should be classified into groups described below.

Group 1 should consist of such stations as are situated locally upon an initial line (the line to which the shipment is offered at point of origin). To this group of stations, the routing should be via the initial line, because the line at origin of shipment can render better service to points on its own rails than if the shipment were given to an initial line, which is not also the delivering line. The latter routing would cause an interchange at an intermediate junction point to the initial line, which is also the delivering line. This not only causes delays but is a useless and expensive transfer.

Group 2 should consist of such stations as are situated locally on roads that are not initial lines, but are represented by through cars from origin to some transfer point on such lines. For example, the International & Great Northern Railway, which is located wholly within the state of Texas, operates daily from Chicago four through merchandise cars to break bulk at the most convenient transfer points on that line. At these transfer points the contents of these cars are removed and reloaded into another set of cars for final destination, each car performing a different service, thus making the service from Chicago to points on the line of the International & Great Northern Railway with one transfer. The service per-

formed in this manner is the same as if the rails of the International & Great Northern Railway extended into the city of Chicago, and the shipments would not be handled differently. This line, so far as the shipper is concerned, may be classed as an initial line. The routing to this group of stations should be via the initial line operating the through cars from origin.

Group 3 should consist of such competitive points as are on two or more initial lines and such other lines as are represented by through cars as described in Group 2. The routing to this group of stations should be via the line operating a through package car from origin. It may be found that one road may have a through car to some of these points, and to other points another road may operate the through car. In such cases the routing should be via the road operating the through car to destination. In the absence of through service by either of the lines, the one reaching destination with the least number of transfers should be selected. Where the same number of transfers will occur via each of the lines, care should be taken to select the route making the best time as illustrated in Diagram 2.

Group 4 should consist of stations to which through merchandise cars are operated from origin, whether a competitive or a non-competitive station. Routing to these points should be via the initial line operating the through car. If more than one road operates a through car to the same destination, the line most convenient to the shipper should be used unless it is the consignee's desire to use the other route.

Group 5 should consist of stations on lines that are not initial and are not represented by through package cars from origin. The routing to these stations should be as

follows: (1) In cases where through package cars are operated to a junction with the above-mentioned lines shipments should be routed to the junction, from which cars are loaded to final destination with the one transfer, always using (in case there is such) the through package car that will provide for a Class-A transfer, as described on page 7. In the absence of such cars, the next selection should be the car giving a Class-B transfer. (2) In cases where cars are operated to more than one junction of the same line it may be necessary to route a portion of these stations via one junction and a portion via another junction. Just what portion should go via each of the junctions is determined by the package cars operated from origin, the time required to reach the junction, the class of transfer at each of the break-bulk points, and the through merchandise cars that are loaded at each of the junctions. (3) In cases where no through package cars are operated to any of the junctions on lines that are not initial and not represented by through package cars, shipments should be routed via the line operating through package cars to a break-bulk point from which a car is operated to the junction of these lines, using the same care in regard to transfer as is described above (2).

Map-Routing

Map-routing is unreliable for the reason that shipments must be routed via the line over which the rates are applicable. While it may be true that the rates are the same via each and all of the lines, still the junction at which one line will make delivery to its connections may be entirely different from another, and possibly neither of these the shipper would consider the logical point as it would appear on the map.

In routing by this method, it must be remembered that a shipment will not always move via what may appear to be the short-line mileage or logical route, but must move by way of the junctions through which the rates apply and which are fixed by agreement between the initial line and its connections; otherwise, the rate will be made by a combination of locals which is higher than the through rate, and an overcharge will be the result. The shipper must also remember that the division of earnings is made by an agreement between the lines over which the shipment may move, and this agreement always specifies the junctions through which the shipment is to move. In some cases, the initial line may deliver at one junction a portion of the freight for its connections and the remainder at some other junction. In respect to service, the deliveries through one junction may be good and through another bad. A shipment should be routed in accordance with the service each line performs. To understand this service it is necessary to know how each of the lines will handle the shipment if given to it unrouted, and how the shipment will be handled when routed via each of the various junctions through which it can possibly move. The route to be selected is the one that can transport the shipment to destination in the shortest possible time and with the least number of transfers.

Diagram 3 illustrates what is said above. A represents origin and B destination. Lines G and H are initial lines. Line F is the delivering line. A shipment made via line G will pass through junction E and be delivered to line F at D with a Class-C transfer, because the agreement between the two lines calls for delivery at this point, and the rates are made accordingly. You will observe that the shipment by this route moves from D to C and from

C to B through junction E. The same shipment when forwarded by line H will be delivered to line F at C with a Class-A transfer, and thence through junction E to destination.

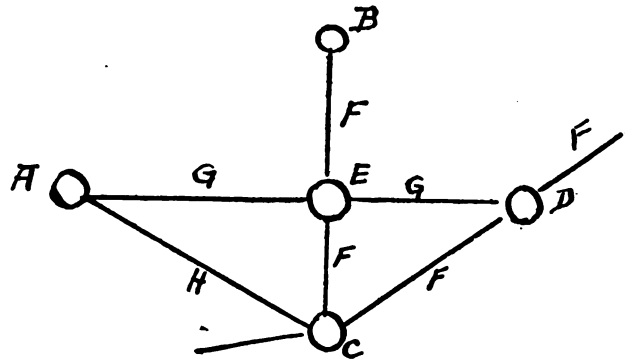

Diagram 3

Through Package Cars and Their Use

Correctly speaking, a through package car is one that is loaded with less-than-carload shipments to break bulk at a given point. In some cases the car may be loaded with package freight for one station only. In other cases it may contain shipments for many points beyond. The lading of these cars consists of shipments for the point at which the car breaks bulk, and for certain points beyond to which the service from break-bulk point would be better when transferred there than when loaded into a package car to break bulk at some other point. The business to points beyond the break-bulk points is divided between the various through cars, to each according to the service that it performs to those points. The question of distance has nothing to do with a through car, except that for a longer distance a greater territory for points beyond must be loaded into the car to justify its operation. On the

other hand, to a shorter distance, they come within the radius of a greater number of package cars; consequently, a smaller territory for points beyond is loaded in each of the cars.

In cases where two package cars are operated from the same origin to the same destination, but via different routes, the lading of one car is different from another; and for certain points beyond the break-bulk point one of the cars can be classed as a through car as against the other car for the same points. To illustrate, in Diagram 4 A represents origin and B destination of the package cars operating over lines C and D, both to break bulk at B. Lines E and F represent the lines beyond the break-bulk point. Shipments to points on line E and loaded in a through package car operated by line C should be classed as a through package car. This being the particular car that can handle shipments from origin to destination with a Class-A transfer (as described on page 7), it therefore reaches destination more quickly than when loaded in the package car operating via route D. The reverse is true when shipments are destined to points on line F.

Hence, when we speak of through package cars to those points beyond the break-bulk points, it is understood that one is a through car to certain of the points beyond, and to others it is not.

On account of the advantages of through package cars in the routing of shipments, it is necessary that the shipper should fully understand their use, so that he may more thoroughly coöperate with the carriers, each being benefited thereby. The carriers are benefited by the increased tonnage per car together with reduced expenses in operating same; and the shipper receives in return for his patronage satisfactory service. A misunderstanding

of this subject may result in serious delays, because the shipper is not familiar with the many details as to how one line will handle shipments to a certain territory as against another line to the same territory. To illustrate this further, we shall presume that Diagram 4 repre-

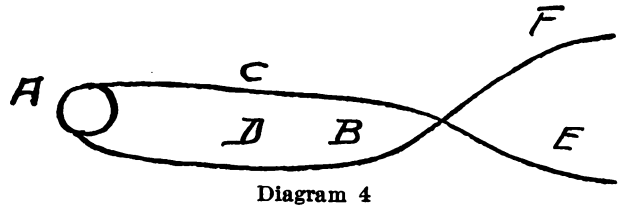

Diagram 4

sents two through package cars operating from Cincinnati, Ohio, to Jacksonville, Fla., each making the same schedule to Jacksonville. A represents Cincinnati, and B Jacksonville, Fla. The through package car from A to B operating via line C will arrive in Jacksonville at the A. C. L. transfer, while the car via line D will arrive at the S. A. L. transfer. Line E represents the A. C. L. R. R. beyond Jacksonville; line F represents the S. A. L. R. R. beyond Jacksonville. A shipper at origin, designing to reach a point on line F, being conveniently located to line C at origin and knowing that C operates a car to Jacksonville which makes the same time as via line D, is likely to conclude that the service via line C would be the same as when via line D. But, as a matter of fact, shipments given to line C would not be loaded in the Jacksonville car at all, but would be loaded in a through package car at some break-bulk point short of Jacksonville. At this point, the shipments would be loaded to Jacksonville, for the reason that the arrangements with the initial line and their connections specify that shipments must be delivered to them at certain junctions. For this reason, to points

on line F the car operating from Cincinnati to Jacksonville via line D is the through car, while for points on line E, the car operating via line C is a through car.

Should lines C and D operate a car via both routes, the service would be equal.

Co-Operative Routing

We use the above term to designate the methods used in some communities through their commercial organizations for the disseminating of information on such subjects. These organizations undertake to furnish the shipper the information necessary to route his shipments in order to get the best service, having in mind the effect on the market as well as the future development of the service. The nature of these organizations enables them to correct abuses and bring about improvement of conditions that could not be accomplished by the individual shipper. These organizations are well equipped for securing and compiling the necessary information for the use of their members.

A good illustration of the work done by these organizations along the line of furnishing the shipper with the information necessary to route his shipments properly is the work done through the Freight Traffic Committee of the Chicago Association of Commerce. This committee has a department for the dissemination of such information as is useful to the shipper in the routing of his shipments. This information is furnished to him by the publication of a routing guide called "Way to Ship." This guide is simply a list of stations in each state arranged in alphabetical order. Opposite each station, a number is shown, and, by reference to the correspond-

ing number in the section on routing, the necessary information is given for correctly routing shipments (thus obtaining the best possible service under the then present conditions), the number of days required to each destination, and the times transferred.

By this means the committee has been able to bring about many changes and improvements in the methods of handling shipments, which have resulted in a greatly improved service as compared with that furnished before the improved methods were employed. The guide is issued as often as changes occur in the service. It advises the shipper of the changes and the effect the changes will have upon the movement of his shipments, without having to take the time and trouble to make the investigation.

It is probable that no other commercial organization has ever undertaken to furnish to its members the amount of detailed information that is shown in this guide. The results have been very gratifying.

Before this method was adopted, the shipper, lacking in sufficient and proper information, was dividing his shipments among all the carriers, the result being that no one carrier could accumulate sufficient tonnage to a given point to enable it to furnish a through-car movement. But with the use of this guide each shipper can route uniformly, thus bringing all shipments for the same territory to the same road, in that way furnishing them the amount of tonnage necessary to justify the operation of the through car.

By this coöperation of shippers and carriers, results are accomplished which could not be successfully done by any other method. Immediately there was, on the part of the carriers, a quickening of the service and a general

watchfulness of the movements of the cars, in order to improve the service further; they soon realized that good service was necessary to the securing of business. The shipper soon realized that correct routing was necessary to get this service.

Conclusion

So far only abstract principles to be applied in routing have been given in this treatise. In order to assist the reader who may not be experienced in this line of work, we will give a few concrete examples of problems to be met in the routing of freight, using the various routes more commonly used between New York and Chicago as illustrating some of the points which would arise in considering the use of the different routes. The four routes to be considered are as follows: all-rail, rail-and-lake, ocean-and-rail, and river-canal-and-lake. Each has its own set of rates, so that if rates were the only factor to be considered it would be easy to come to a decision, but, as will be shown, rates are only one of the factors which must be considered in routing shipments. In the handling of freight, as in manufacturing, the cheapest is not always the best. A few cents or a few dollars saved on a shipment at the expense of losing a good customer is not in any sense routing to the best advantage.

The first example which we shall take is that of a shipment which must be in Chicago four days after it is shipped, is of such a nature that every additional handling is liable to be injurious, and is destined to a customer who has a siding on the tracks of the Michigan Central Railroad in Chicago. Suppose that to save the difference between the all-rail rate and the rail-and-lake rate the shipper sends the consignment via rail and lake. A num-

ber of the packages are so damaged in transferring from the car to the boat at Buffalo that they are utterly useless when received by the customer. The shipment has been so delayed that it does not arrive in Chicago until seven days after it is shipped, or three days after the required date, and it comes into Chicago on the water-front and has to be trucked several miles to the customer's place of business, whereas, if properly consigned by all rail, it would have been delivered direct to the customer's door. In order to save a few dollars of freight charges a customer buying thousands of dollars' worth of business has been lost and a considerable amount of money is tied up in freight claims. To carry the case to its possible conclusion the customer may refuse to accept the shipment from the boat line, and it will thus be left on the hands of the shippers to be disposed of in any way possible. The shipment properly consigned, possibly over The New York Central Railroad, in care of the Michigan Central Railroad, would have gone to the customer on time, the contents of the car would not have been injured in transfer, and the consignment would have been delivered at the customer's door without expense. In such a case as this the shipper may well be said to have missed some of the most important principles of routing.

Having seen the error of routing a certain class of business by other than the all-rail route, we shall consider another class of shipments which can move by other routes and thus secure the advantage of the lower rates applying over such other routes. Many kinds of commodities are not, as a rule, injured by transfers, unless subjected to unusually rough handling, and a few days more or less in transit will not affect the com-

modity in any way. Such business may well be routed by rail and lake or by ocean and rail. Where it is possible to anticipate the time at which a shipment must be in Chicago, a shipment may be made a few days earlier than would be necessary by an all-rail route. In this way the business may be delivered at the desired date without any additional expense of any kind and a considerable saving in freight made. Many manufacturers are in the habit of making their shipments in this way, especially where the articles are staple, as an occasional delay on a particular shipment will not be particularly injurious to anyone.

In some lines of business it is customary to move shipments during the rail-and-lake season, which closes in November, even if it is necessary to pay storage in Chicago, as enough saving in freight charges can be made to offset the storage charges. It should be borne in mind that the ocean-and-rail routes are open all winter, and, where possible, all things being considered, they should be used when available.

There remains for consideration one more route in more or less common use than the others between New York and Chicago. On account of the great length of time required for transporting business between these two points, this route is only practicable under certain circumstances. The route to which we refer is the river-canal-and-lake route, the business being handled from New York City to Albany by the Hudson River, from Albany to Buffalo by the Erie Canal, and from Buffalo west by the Great Lakes. There is a very material saving in freight charges by this route, the first-class rate generally being about 42 cents per 100 pounds as against 75 cents by all rail. The length of time required and the

conditions of transportation absolutely bar movements of many commodities by this route, but on the other hand, for coarse commodities and those of such a nature that a large stock is carried in Chicago at all times, this route may be used to good advantage. An example of a commodity which can be handled to good advantage in this way is pumice. This is a commodity not liable to damage, and it is one which is carried in large quantities, so that even a considerable delay in the arrival would not cause any serious injuries. Standard grades of pumice which are salable at all times may be shipped in large quantities far in advance of the time that they will be needed, and the saving in freight charges will be very considerable.

For purposes of comparison, we give below a table of some of the rates applying over the various routes between New York and Chicago, westbound and eastbound. For an extended discussion of these routes and others of the same nature, the student is referred to the treatise on *Freight Rates: Official Classification Territory*.

	Rates in Cents per 100 Pounds							
	Classes							
From New York to Chicago	1	2	R25	3	R26	4	5	6
All-rail	90	79	67	60	48	42	36	30
Rail-and-lake	77	68	58	51	38	37	31	26
Ocean-and-rail	77	68	58	51	38	37	31	26
From Chicago to New York								
All-rail	90	79	67	60	48	42	36	30
Rail-and-lake	78	69	59	53	43	37	32	26
Ocean-and-rail	87	76	64.5	57	45.5	39	34	28

[1]Via Long Island Ports.

Having seen what the difference in freight charges is by the way of the different lines, the traffic man must weigh the different factors entering into the handling of his business, to ascertain which is the best for him, all things being considered. We have already shown that a saving in freight charges may be many times offset by the results obtained.

To conclude, the following points are among those which must be considered in making a shipment via a particular route. (1) Will a saving of freight charges be more than offset by cartage charges on account of a longer haul, either at originating or delivering point, or both? (2) Are cheaper routes liable to result in injury to the shipment, so that it will be delivered to consignee in bad condition or possibly be refused? (3) Is time enough of an element in the transaction to make the payment of additional freight charges worth while? The consideration of these is really an application of the rules for routing freight already referred to in this treatise.

For the benefit of readers who may be interested in the matter of coöperative routing as above outlined, we give below a section of the weekly bulletin issued by the Freight Traffic Committee of the Chicago Association of Commerce. This bulletin enables the shipper to keep closely in touch with the service given by the various lines and to route his business by the lines which show that they are making the very best time to the various points. This record being constantly kept up and published, it shows what results are being secured month in and month out. This obviates the necessity of the shipper's depending on his own experience to find out what time is being made to different points by various lines.